Listing of the Claims:

The following is a complete listing of all the claims in the application, with an indication of the status of each:

1   1 (Previously Presented). An image comparison system comprising:

2   means for inputting three-dimensional data of an object;

3   reference image storing means for storing a reference image of at least

4   one reference object;

5   .   pose candidate deciding means for generating a plurality of pose

6   candidates;

7   comparison image generating means for generating, for the reference

8   image for the at least one object, a comparison image close to the reference

9   image, said generating including projecting the three-dimensional data onto a

10   two-dimensional image in accordance with each of the plurality of pose

11   candidates to generate a plurality of comparison images and calculating, for

12   each of the plurality of comparison images, the minimum distance between the

13   comparison image and the reference image and selecting, as the comparison

14   image close to the reference image, the comparison image having the smallest

15   minimum distance;

16   reference correction coefficient storing means for storing a correction

17   coefficient corresponding to the reference image;

18   image comparing means for determining one of a minimum distance

19   value and a maximum similarity degree between the reference image and the

20   generated comparison images; and

21   correcting means for correcting, based on the correction coefficient,

22   one of the minimum distance value and the maximum similarity degree

23   determined by the image comparing means,

24   wherein the image comparing means performs a comparison between

25   the reference image and each of the generated comparison images on the basis

26   of one of the minimum distance value and the maximum similarity degree

27   corrected by the correcting means and, based on a result of the comparison,

28   identifies whether a match exists between any of the generated comparison

29   images and of the reference image.

1   2. (Previously presented) The image comparison system of claim 1, wherein

2   said image comparing means identifies whether a match exists based on a

3   comparison between the minimum distance value between the reference image

4   and the generated comparison image and a threshold value and a result of

5   comparison between the maximum similarity degree between the reference

6   image and the generated comparison image and a threshold value.

1   3. (Previously presented) The image comparison system of claim 1,

2   .   wherein said reference image storing means stores a reference image

3   for each of a plurality of objects,

4   wherein said comparison image generating means generates, for each

5   of the reference images, a comparison image close to the reference image, and

6   said image comparing means comprises:

7   calculating means for calculating, for each of the reference

8   images, one of a distance value and a similarity degree between the reference

9   image and the generated comparison image close to the reference image;

10   selecting means for selecting, for each of the reference images,

11   one of a minimum distance value which is a smallest distance value and a

12   maximum similarity degree   which is a largest similarity degree for each

13   reference image; and

14   comparing means for outputting, as a comparison result, one of

15   a reference image including a smallest minimum distance value which is a

16   smallest one of minimum distance values and a reference image including a

17   largest maximum similarity degree which is a largest one of maximum

18   similarity degrees.

        4. (Cancelled)

1   5. (Previously presented) The image comparison system of claim 1, further

2   comprising reference weighting coefficient storing means for storing a

3   weighting coefficient corresponding to the reference image,

4   said image comparing means comprising calculating means for

5   calculating one of the distance value and the similarity degree between the

6   reference image and the comparison image based on the weighting coefficient

7   corresponding to the reference image.

1   6. (Previously presented) The image comparison system of claim 1 further

2   comprising:

3   standard three-dimensional reference point storing means for storing a

4   standard three-dimensional reference point corresponding to a standard

5   three-dimensional object model;

6   standard three-dimensional weighting coefficient storing means for

7   storing a standard three-dimensional weighting coefficient;

8   three-dimensional reference point extracting means for extracting a

9   three-dimensional reference point from the input three-dimensional data; and

10   input weighting coefficient converting means for obtaining a

11   coordinate correspondence of the standard three-dimensional weighting

12   coefficient to the three-dimensional data based on the standard

13   three-dimensional reference point and the three-dimensional reference point of

14   the three-dimensional data, and converting the standard three-dimensional

15   weighting coefficient into a two-dimensional weighting coefficient in

16   accordance with the pose candidate,

17   said image comparing means comprising calculating means for

18   calculating one of the distance value and the similarity degree between the

19   reference image and the comparison image based on the converted

20   two-dimensional weighting coefficient.

1   7. (Previously presented) The image comparison system of claim 1, further

2   comprising:

3   representative three-dimensional object model storing means for

4   storing representative ones of three-dimensional object models as

5   representative three-dimensional object models;

6   group storing means for storing related information of the

7   representative three-dimensional object models and reference images;

8   three-dimensional comparing means for comparing the input

9   three-dimensional data with the representative three-dimensional object

10   models, and selecting a representative three-dimensional object model similar

11   to the three-dimensional data; and

12   reference image selecting means for selecting a reference image

13   corresponding to the selected representative three-dimensional object model

14   by referring to the related information,

15   wherein said image comparing means compares the selected reference

16   image with the input three-dimensional data.

1   8. (Previously presented) The image comparison system of claim 1, further

2   comprising:

3   representative image storing means for storing representative ones of

4   images as representative images;

5   group storing means for storing related information of the

6   representative images and reference images;

7   representative image selecting means for comparing the input

8   three-dimensional data with the representative images, and selecting a

9   representative image similar to the three-dimensional data; and

10   reference image selecting means for selecting a reference image

11   corresponding to the selected representative image by referring to the related

12   information,

13   wherein said image comparing means compares the selected reference

14   image with the input three-dimensional data.

1   9. (Currently Amended) The image comparison system of claim ~~4~~ 1,

2   wherein the correction coefficient is determined on the basis of at least one of

3   a distance value and a similarity degree between a representative

4   three-dimensional object model and the reference image.

1   10. (Previously Presented) An image comparison method for identifying a

2   match of an object to a stored reference image of at least one object,

3   comprising steps of:

4   inputting three-dimensional data of an object;

5   generating at least one pose candidate as a candidate for pose of the

6   object;

7   generating, for the reference image of the at least one object, a

8   comparison image close to the reference image, said generating including

9   projecting the three-dimensional data onto a two-dimensional image in

10   accordance with each of the plurality of pose candidates to generate a plurality

11   of comparison images and calculating, for each of the plurality of comparison

12   images, the minimum distance between the comparison image and the

13   reference image and selecting, as the comparison image close to the reference

14   image, the comparison image having the smallest minimum distance;

15   storing a correction coefficient corresponding to the reference image;

16   identifying whether a match exists between the generated comparison

17   image and the reference image, said identifying including determining one of a

18   minimum distance value and a maximum similarity degree between the

19   reference image and the generated comparison images; and

20   correcting, based on the correction coefficient, one of the minimum

21   distance value and the maximum similarity degree determined by the

22   identifying step,

23   wherein the step of identifying whether a match exists includes

24   performing a comparison between the reference image and each of the

25   generated comparison images on the basis of one of the minimum distance

26   value and the maximum similarity degree corrected by the correcting step and,

27   based on a result of the comparison, identifying whether a match exists

28   between any of the generated comparison images and of the reference image.

1   11. (Previously presented) The image comparison method of claim 10,

2   wherein the step of identifying whether a match exists includes performing

3   one of a comparison between the minimum distance value between the

4   reference image and the generated comparison image and a threshold value

5   and a comparison between the maximum similarity degree between the

6   reference image and the generated comparison image and a threshold value.

1   12. (Previously presented) The image comparison method of claim 10,

2   wherein the step of generating a comparison image comprises the step

3   of generating a comparison image close to each reference image for each of a

4   plurality of objects; and

5   wherein the step of identifying whether a match exists comprises the

6   steps of:

7   calculating, for each of the reference images, one of a distance value

8   and a similarity degree between the reference image and the generated

9   comparison image close to the reference image;

10   selecting, for each of the reference images, one of a minimum distance

11   value which is a smallest distance value and a maximum similarity degree

12   which is a largest similarity degree for each reference image; and

13   outputting, as a comparison result, one of a reference image including

14   a smallest minimum distance value which is a smallest one of minimum

15   distance values and a reference image including a largest maximum similarity

16   degree which is a largest one of maximum similarity degrees.

1   13. (Previously presented) The image comparison method of claim 10, further

2   comprising the step of correcting one of the minimum distance value and the

3   maximum similarity degree based on a correction coefficient corresponding to

4   the reference image.

1   14. (Previously presented) The image comparison method of claim 10,

2   wherein the step of identifying whether a match exists comprises the step of

3   calculating one of the distance value and the similarity degree between the

4   reference image and the comparison image based on a weighting coefficient

5   corresponding to the reference image.

1   15. (Previously presented) The image comparison method of claim 10, further

2   comprising the steps of:

3   extracting a three-dimensional reference point from the input

4   three-dimensional data; and

5   obtaining a coordinate correspondence of a standard three-dimensional

6   weighting coefficient to the three-dimensional data by using a standard

7   three-dimensional reference point corresponding to a standard

8   three-dimensional object model and the three-dimensional reference point of

9   the three-dimensional data, and converting the standard three-dimensional

10   weighting coefficient into a two-dimensional weighting coefficient in

11   accordance with the pose candidate,

12   wherein the step of identifying whether a match exists comprises the

13   step of calculating one of the distance value and the similarity degree between

14   the reference image and the comparison image based on the converted

15   two-dimensional weighting coefficient.

1   16. (Previously presented) The image comparison method of claim 10, further

2   comprising the steps of:

3   comparing the input three-dimensional data with representative

4   three-dimensional object models which are representative ones of

5   three-dimensional object models, and selecting a representative

6   three-dimensional object model similar to the three-dimensional data; and

7   selecting a reference image corresponding to the selected

8   representative three-dimensional object model by referring to information

9   indicating relations between the representative three-dimensional object

10   models and reference images,

11   wherein the step of identifying whether a match exists comprises the

12   step of comparing the selected reference image with the input

13   three-dimensional data.

1   17. (Previously presented) The image comparison method of claim 10, further

2   comprising the step of:

3   comparing the input three-dimensional data with representative images

4   which are representative ones of images, and selecting a representative image

5   similar to the three-dimensional data; and

6   selecting a reference image corresponding to the selected

7   representative image by referring to information indicating relations between .

8   the representative images and reference images,

9   wherein the step of identifying whether a match exists comprises the

10   step of comparing the selected reference image with the input

11   three-dimensional data.

1   18. (Previously presented) The image comparison method of claim 13, further

2   comprising the step of determining the correction coefficient on the basis of at

3   least one of a distance value and a similarity degree between a representative

4   three-dimensional object model and the reference image.

1   19. (Previously Presented) A computer readable medium storing a computer

2   program that, when executed by the computer, causes the computer to execute:

3   a procedure of inputting three-dimensional data of an object;

4   a procedure of generating at least one pose candidate as a candidate for

5   pose of the object;

6   a procedure of generating, for the reference image of the at least one

7   object, a comparison image close to the reference image, said generating

8   including projecting the three-dimensional data onto a two-dimensional image

9   in accordance with each of the plurality of pose candidates to generate a

10   plurality of comparison images and calculating, for each of the plurality of

11   comparison images, the minimum distance between the comparison image and

12   the reference image and selecting, as the comparison image close to the

13   reference image, the comparison image having the smallest minimum

14   distance;

15   a procedure of storing a correction coefficient corresponding to the

16   reference image;

17   a procedure of identifying whether a match exists between the

18   generated comparison image and the reference image, said identifying

19   including determining one of a minimum distance value and a maximum

20   similarity degree between the reference image and the generated comparison

21   images; and

22   a procedure of correcting, based on the correction coefficient, one of

23   the minimum distance value and the maximum similarity degree determined

24   by the procedure of identifying whether a match exists,

25   wherein the procedure of identifying whether a match exists includes a

26   procedure of performing a comparison between the reference image and each

27   of the generated comparison images on the basis of one of the minimum

28   distance value and the maximum similarity degree corrected by the procedure

29   of correcting and, based on a result of the comparison, identifying whether a

30   match exists between any of the generated comparison images and of the

31   reference image.

1   20. (Previously Presented) The computer readable storage medium of claim

2   19, wherein the computer program, when executed by the computer in the

3   procedure of identifying whether a match exists causes the computer to

4   execute:

5   a procedure of one of a comparison between the minimum distance

6   value between the reference image and the generated comparison image and a

7   threshold value and a comparison between the maximum similarity degree

8   between the reference image and the generated comparison image and a

9   threshold value.

1   21. (Previously presented) The computer readable storage medium of claim

2   19, wherein the computer program, when executed by the computer in the

3   procedure of generating a comparison image, causes the computer to execute a

4   procedure of generating a comparison image close to each reference image for

5   each of a plurality of objects, and

6   in the procedure of identifying whether a match exists causes the

7   computer to execute:

8   a procedure of calculating, for each of the reference images, one of a

9   distance value and a similarity degree between the reference image and the

10   generated comparison image close to the reference image;

11   a procedure of selecting, for each of the reference images, one of a

12   minimum distance value which is a smallest distance value and a maximum

13   similarity degree which is a largest similarity degree for each reference image;

14   and

15   a procedure of outputting, as a comparison result, one of a reference

16   image including a smallest minimum distance value which is a smallest one of

17   minimum distance values and a reference image including a largest maximum

18   similarity degree which is a largest one of maximum similarity degrees.

1   22. (Previously presented) The computer readable storage medium of claim

2   19, wherein the computer program, when executed by the computer further

3   causes the computer to execute a procedure of correcting one of the minimum

4   distance value and the maximum similarity degree based on a correction

5   coefficient corresponding to the reference image.

1   23. (Previously Presented) The computer readable storage medium of claim

2   19, wherein the computer program, when executed by the computer in the

3   procedure of identifying whether a match exists, performing comparison, the

4   program causes the computer to execute a procedure of calculating one of the

5   distance value and the similarity degree between the reference image and the

6   comparison image by using a weighting coefficient corresponding to the

7   reference image.

1   24. (Previously presented) The computer readable storage medium of claim

2   19, wherein the computer program, when executed by the computer further

3   causes the computer to execute:

4   a procedure of extracting a three-dimensional reference point from the

5   input three-dimensional data; and

6   a procedure of obtaining a coordinate correspondence of a standard

7   three-dimensional weighting coefficient to the three-dimensional data by using

8   a standard three-dimensional reference point corresponding to a standard

9   three-dimensional object model and the three-dimensional reference point of

10   the three-dimensional data, and converting the standard three-dimensional

11   weighting coefficient into a two-dimensional weighting coefficient in

12   accordance with the pose candidate,

13   wherein in the procedure of performing comparison, the program

14   causes the computer to execute a procedure of calculating one of the distance

15   value and the similarity degree between the reference image and the

16   comparison image by using the converted two-dimensional weighting

17   coefficient.

1   25. (Previously presented) The computer readable storage medium of claim

2   19, wherein the computer program, when executed by the computer further

3   causes the computer to execute:

4   a procedure of comparing the input three-dimensional data with

5   representative three-dimensional object models which are representative ones

6   of three-dimensional object models, and selecting a representative

7   three-dimensional object model similar to the three-dimensional data; and

8   a procedure of selecting a reference image corresponding to the

9   selected representative three-dimensional object model by referring to

10   information indicating relations between the representative three-dimensional

11   object models and reference images,

12   wherein in the procedure of performing comparison, the program

13   causes the computer to execute a procedure of comparing the selected

14   reference image with the input three-dimensional data.

26. (Previously presented) The computer readable storage medium of claim 19, wherein the computer program, when executed by the computer further causes the computer to execute:

a procedure of comparing the input three-dimensional data with representative images which are representative ones of images, and selecting a representative image similar to the three-dimensional data; and

a procedure of selecting a reference image corresponding to the selected representative image by referring to information indicating relations between the representative images and reference images,

wherein in the procedure of performing comparison, the program causes the computer to execute a procedure of comparing the selected reference image with the input three-dimensional data.

27. (Previously presented) The computer readable storage medium of claim 22, wherein the computer program, when executed by the computer further causes the computer to execute a procedure of determining the correction coefficient on the basis of at least one of a distance value and a similarity degree between a representative three-dimensional object model and the reference image.